

REMARKS

Claims 1-19 have been examined. With this amendment, Applicant adds claims 20-23.

Claims 1-23 are all the claims pending in the application.

1. Formalities

Applicant thanks the Examiner for acknowledging the claim for foreign priority and for confirming receipt of the certified copies of the priority documents.

Applicant thanks the Examiner for indicating that the drawings filed on May 14, 2001 have been accepted.

2. Drawings

Applicant has corrected a minor error in Fig. 12B. The reference element "tR2" has been corrected to "tR'2." Support for this correction may be found at least on page 48, line 15 of the Specification.

3. Claim Objections

The Examiner has objected to claims 1-4, 10, 11, 14, 15 and 17 because the claims allegedly do not have the proper spacing between the words.

It appears that the formatting may have been a problem with the original submission. Applicant notes, however, that the claims appear to be in proper format on the PTO Web-Site.

Applicant submits that the claims as listed in this amendment obviate the objection.

4. Claim Rejections Under 35 U.S.C. § 103

The Examiner has rejected claims 1-4, 6, 7, 10-13, 16 and 17 under 35 U.S.C. § 103(a) as being unpatentable over Kano et al. (US 5,359,513) [“Kano”] in view of Maeda et al. (US 5,153,444) [“Maeda”]. For at least the following reasons, Applicant traverses the rejection.

The Examiner concedes that Kano does not disclose “selecting local area limited regions, between which a degree of shift is high”, but attempts to cure this deficiency by applying Maeda. The Examiner contends that it would have been obvious for one skilled in the art to combine the teachings of Kano and Maeda because Maeda provides Kano a system which uses a two-cell comparison method and which provides a plurality of images with a high degree of alignment for error calculations on patterns.

Maeda relates to a method and apparatus for detecting defects in circuit patterns formed on semiconductor wafers (LSI, TFT) (see col. 1, lines 14-19). The comparison methods (two-chip and two-cell) disclosed in Maeda are applicable to members having the same patterns or a member having the same pattern arranged at periodic intervals (see col. 2, line 61- col. 3, line 6). There is no disclosure or suggestion that these methods would be compatible with the medical images of Kano, which do not have patterns similar to those of integrated circuits. Therefore, Applicant submits that the Examiner’s proffered reasons for combining are not supported in the references as required by the MPEP.

Even if the references were combined as suggested by the Examiner, Applicant submits that they still do not disclose all the elements of claim 1 as required for a *prima facie* case of obviousness. For example, Maeda does not disclose the feature “a degree of shift is high” as contended by the Examiner. The cited sections only disclose the calculation of a positional shift.

Any disclosure regarding “high degree” is in the context of providing images with a high degree of alignment, not in the context of a degree of shift being high as set forth in claim 1. Therefore, Maeda relates to processing based on an opposite characteristic as that claimed.

In addition, claim 1 recites steps for

- 1) “approximate position mapping...[on] two images”;
- 2) “selecting local area limited regions...in the two images, whose positions have been approximately matched”; and
- 3) “performing position re-matching...[on] at least the local area limited regions.”

The Examiner cites two sections of Kano that describe non-linear warping technique and the regions of interest (ROI) that are eventually used in the non-linear warping as allegedly disclosing the claimed “approximate position mapping.” Then, the Examiner contends that sections that describe the same ROIs as those that allegedly disclose the claimed “approximate position mapping” also disclose the claimed “selecting local area limited regions.” Finally, the Examiner contends these same sections also correspond to the claimed “re-matching.” Applicant submits that the Examiner has improperly used disclosure of the same ROIs in the rejection of three separate claimed elements.

In addition, Applicant submits that Kano discloses a method of analyzing images where ROIs are selected on the two original images, local matching is performed on each pair of ROIs and the results are used to perform non-linear warping of one of the images to match the other (see Fig. 1B and col. 5, lines 1-16). There is no disclosure in Kano that after the non-linear warping, which the Examiner contends corresponds to the approximate position matching, Kano

performs “selecting local area limited regions...in the two images, whose positions have been approximately matched” or the “re-matching” as set forth in claim 1.

Further, the alleged “selection of ROIs” in Kano is different from the claimed selection of the local area limited regions. In Kano, the “selection” is more accurately described as an “assignment” or “allocation” of the ROIs, whereas, as set forth in claim 1, the claimed selection is an “extraction” of the local area limited regions. Therefore, Applicant submits that the Examiner’s cited sections (Col. 5, lines 1-16 and 48-57) are not relevant to the claimed combination.

Because claim 10 recites features similar to claim 1, Applicant submits that claim 10 is patentable for at least the reasons given in claim 1.

Because claims 2-4, 6, 7, 11-13, 16 and 17 depend on either claim 1 or 10, Applicant submits that these claims are patentable at least by virtue of their respective dependencies.

The Examiner has rejected claims 8, 9, 18 and 19 under 35 U.S.C. § 103(a) as being unpatentable over Kano in view of Maeda and further in view of Suzuki et al. (US 5,572,566) [“Suzuki”]. For at least the following reasons, Applicant traverses the rejection.

Because Suzuki does not cure the deficient teachings of Kano and Maeda with respect to claims 1 and 10, Applicant submits that claims 8, 9, 18 and 19 are patentable at least by virtue of their respective dependencies.

5. Allowable Subject Matter

Applicant thanks the Examiner for finding allowable subject matter in claims 5, 14 and 15 and for indicating that these claims would be allowable if rewritten in independent form.

Applicant holds rewriting these claims in abeyance until the matter regarding their base claims is resolved.

6. New claims

With this amendment, Applicant adds claims 20-23. Applicant submits that these claims are patentable at least by virtue of their dependency on claim 1 and also because they recite features found in claim 5 which has allowable subject matter.

7. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Pursuant to 37 C.F.R. § 1.136, Applicant is submitting a petition (with fee) for three months of extension time herewith, making this extension due on or before October 6, 2004. The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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Respectfully submitted,



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